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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,907	08/09/2001	Masaki Hamamoto	70904-56378	4511

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EXAMINER

RODRIGUEZ, GLENDA P

ART UNIT PAPER NUMBER

2651

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,907

Applicant(s)

HAMAMOTO ET AL.

Examiner

Glenda P. Rodriguez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 6, 7, 10, 14, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onagi (US Patent No. 5, 757, 736) in view of Nakayama et al. (US Patent No. 5, 666, 332).

Regarding Claims 1, 7, 15 and 17, Onagi teaches a method of a magnetic signal recording method, comprising: Recording arbitrary information in a region on a magnetic recording medium where a coercive force has been varied with local heating, in accordance with a magnetic field from a magnetic recording head (Col. 2, Lines 45-47. Onagi teaches using a laser light to record information.), wherein an edge of a recordable region on said magnetic recording medium is located in a position in which substantial equality is attained between (a) a coercive force in the region where the coercive force on said magnetic recording medium has been varied (Col. 2, Lines 35-42. Onagi teaches layer that have variable coercive forces ranges, therefore, the medium is able to vary the coercive force in any of the two recording layers.) However, Onagi does not explicitly teach wherein the magnetic field intensity in an in-track position in which a magnetic field distribution generated by said magnetic recording head is lowered at a greatest rate. Nakayama et al. teach a medium in which the light intensity is controlled between a high

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power and a low power in order to control the magnetization(to therefore provide the best rate, i.e. greatest rate, as defined by the Applicant's Specification in Page 16, L. 12-Page 17, L. 7, Page 18, L. 12-Page 19, L. 20 and Page 20, L. 11-Page 21, L. 19) (Pat. No. 5, 666, 332; Col. 2, Lines 39-46. It would have been obvious to a person of ordinary skill in the art to know that if the intensity fluctuates between two different powers, the light intensity (and by consequence the rate) will lower or rise.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Onagi's invention with the teaching of Nakayama et al. in order to modify the intensity of the light to control the rate in order to control the intensity of the recording laser.

Apparatus claim 18 is drawn to the apparatus corresponding to the method of using same as claimed in claims 1, 7, 15 and 17. Therefore apparatus claim 18 corresponds to method claims 1, 7, 15 and 17, and is rejected for the same reasons of obviousness as used above.

Regarding Claims 2 and 10, Onagi and Nakayama et al. teach all the limitations of Claim 1. Nakayama et al. further teach wherein said magnetic recording medium and said magnetic recording head, which records a magnetic bit, have a space between themselves in a direction vertical to a film surface of said magnetic recording medium, said space being smaller than a length of the magnetic bit with respect to the track (Pat. No. 5, 666, 332; Fig. 1. Nakayama et al. teaches bits (magnetic transitions in the disks) in which the spacing between the bits and the gaps are smaller than the bit size.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Onagi's invention in order to modify the intensity of the light to control the rate in order to control the intensity of the recording laser.

Regarding Claims 6 and 14, Onagi and Nakayama et al. teach all the limitations of Claims 1 and 7, respectively. Nakayama et al. further teach wherein said magnetic recording medium is a magnetic film whose coercive force is lowered at a greater rate as a temperature rises in a region having a low temperature within a temperature range than a region having a high temperature within the temperature range, where the coercive force and the magnetic field intensity are equal within the temperature range (Col. 6, Line 55 to Col. 6, Line 50). Nakayama et al. teach a method in which the light intensity is changed (could be higher or lower) according to the layer of the disk.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Onagi's invention in order to modify the intensity of the light to control the rate in order to control the intensity of the recording laser.

3. Claims 4, 5, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onagi and Nakayama et al. as applied to claims 1 and 7, respectively above, and further in view of Greidanus et al. (US Patent No. 5, 371, 721).

Regarding Claims 4 and 12, Onagi and Nakayama et al. teach all the limitations of Claims 1 and 7, respectively. Onagi and Nakayama et al. fail to teach wherein said magnetic recording head applies and distributes a recording magnetic field in a rectangular shape on said magnetic recording medium. However, this feature is well known in the art as disclosed by Greidanus et al., wherein it teaches a recording magnetic field in a rectangular shape on said magnetic recording medium (Pat. No. 5, 371, 721; Col. 4, Lines 57-65). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Onagi and Nakayama et al.'s invention in order to fix the positions in the magnetic domains.

Regarding Claims 5 and 13, Onagi and Nakayama et al. teach all the limitations of Claims 1 and 7, respectively. Onagi and Nakayama et al. fail to teach wherein the edge of the recordable region is positioned in a region where a temperature distribution of a heated magnetic recording medium makes concentric circles. However, this feature is well known in the art as disclosed by Greidanus et al., wherein it teaches wherein the edge of the recordable region is positioned in a region where a temperature distribution of a heated magnetic recording medium makes concentric circles (Pat. No. 5, 371, 721; Fig. 3). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Onagi and Nakayama et al.'s invention in order to fix the positions in the magnetic domains.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onagi and Nakayama et al. as applied to claim 7 above, and further in view of Miyata et al. (US Patent No. 6, 611, 388). Onagi and Nakayama et al. teach all the limitations of Claim 7. Onagi and Nakayama et al. fail to teach wherein said magnetic recording medium, which has the axis of easy magnetization vertical to the film surface of said magnetic recording medium, includes a soft magnetic layer. However, this feature is well known in the art as disclosed by Miyata et al., wherein it teaches which has the axis of easy magnetization vertical to the film surface of said magnetic recording medium, includes a soft magnetic layer (Pat. No. 6, 611, 388; Col. 6, Lines 35-51). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Onagi and Nakayama et al.'s invention in order to generate a sufficient magnetic field.
5. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onagi and Nakayama et al. as applied to claims 7 and 15, respectively above, and further in

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view of Fukamashi et al. (US Patent No. 5, 706, 259). Onagi and Nakayama et al. teach all the limitations of Claim 7. Onagi and Nakayama et al. fail to teach wherein said magnetic recording medium is a magnetic recording medium having high magnetic anisotropy in a vertical direction. However, this feature is well known in the art as disclosed by Fukamashi et al., wherein it teaches magnetic recording medium is a magnetic recording medium having high magnetic anisotropy in a vertical direction (Pat. No. 5, 706, 259; Col. 12, Lines 30-42). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Onagi and Nakayama's invention in order to prevent cross erasing.

6. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onagi and Nakayama et al. as applied to claims 1 and 7, respectively above, and further in view of Ishida et al. (US Patent No. 6, 347, 016). Onagi and Nakayama et al. teach all the limitations of Claims 1 and 7, respectively. Onagi and Nakayama et al. fail to teach wherein said magnetic recording medium has a film thickness thinner than the length of the magnetic bit with respect to the track, where the magnetic bit is recorded by said magnetic recording head. However, this feature is well known in the art as disclosed by Ishida et al., wherein it teaches that the film thickness is thinner than the bit length (Col. 10, Lines 34-54).). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Onagi and Nakayama's invention in order to generate sufficient magnetic field for writing in the disk.

Response to Arguments

Applicant's arguments filed 06/22/2004 have been fully considered but they are not persuasive. Applicant argues that neither Onagi nor Nakayama et al. do not disclose

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the edge of the recordable region is located in a position in which the magnetic field intensity is lowered at the greatest rate and none of the cited references has in consideration the shape of the recording bit. However, these features are not being claimed in independent claims 1, 7, 15, 17 and 18. Examiner further comments that the feature of "the magnetic field intensity in an in-track position in which a magnetic field distribution generated by said magnetic recording head is lowered at a greatest rate", the term "greatest rate" is not well defined in the Applicant's specification, therefore the Examiner assumed the "greatest rate" as mentioned in the Applicant's Specification on Page 16, L. 12-Page 17, L. 7, Page 18, L. 12-Page 19, L. 20 and Page 20, L. 11-Page 21, L. 19.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is

(703)305-8411. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (703) 305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



March 4, 2004.



SINH TRAN
PRIMARY EXAMINER